

AUTHORITY: Act 431 of 1984
COMPLETION: Required
PENALTY: Failure to deliver in accordance with Contract terms
and conditions and this notice may be considered in default
of Contract.

STATE OF MICHIGAN
DEPARTMENT OF MANAGEMENT AND BUDGET
OFFICE OF PURCHASING
P.O. BOX 30026, LANSING, MI 48909
OR
530 W. ALLEGAN, LANSING, MI 48933

March 21, 2001

CHANGE NOTICE NO. 7
TO
CONTRACT NO. 071B8000912
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF VENDOR (T C E) TeleCommunication Engineers, Inc. 1172 S. M-13 Lennon, MI 48449	TELEPHONE John Foster (810) 621-4000 Ext. 105
	VENDOR NUMBER/MAIL CODE (2) 38-27758176 (001)
	BUYER (517) 335-0462 Christine Michel <i>CMichel</i>
Contract Administrator: Stan Patterson Engineering & Design Services for Data & Communications Cabling - DMB/OCAT & Statewide	
CONTRACT PERIOD: From: July 21, 1998 To: July 20, 2003	
TERMS Net 30	SHIPMENT N/A
F.O.B. N/A	SHIPPED FROM N/A
MINIMUM DELIVERY REQUIREMENTS N/A	
MISCELLANEOUS INFORMATION:	

NATURE OF CHANGE (S):

Effective immediately, the contract end date for this contract is hereby changed to 7/20/03, to allow completion of the following projects: Cadillac Place, Hall of Justice, and Services Migration Project. This modification includes a 16% increase in rates that have remained unchanged since 1998, and no increase in overall total value.

AUTHORITY/REASON:

Agency request, vendor letter.

INCREASE: \$38,000.00

TOTAL ESTIMATED CONTRACT VALUE REMAINS: \$1,198,000.00

MASTER PRICE INDEX

NAME OF UNIT	PRICE / UNIT
BUILDING SITE INFRASTRUCTURE SURVEY - evaluation of CREDFAX (Conduits, Risers, Equipment/telecom rooms, Distribution and Facilities)	
Up to 50,000 sq.ft.	\$696.00
Over 50,000 sq.ft.	\$1392.00
BUILDING INFRASTRUCTURE DESIGN - designing and specifying CREDFAX	
1-50 Workstations Locations per building	\$1392.00
Additional Workstations Over 50	\$11.60 each
Specification Writing	\$2088.00
OSP (OutSide Plant) SURVEY AND DESIGN	
Identification, Verification and Documentation	\$87.00/hour
Specification Writing	\$87.00/hour
CAD DRAFTING	
Drafting of CREDFAX (on existing building plans)	\$0.03/sq.ft.
Drafting of Buildings and CREDFAX	\$0.06/sq.ft.
OSP Drafting	\$52.20/hr
Printer time	\$52.20/hr
MISCELLANEOUS	
End User/Manager/Miscellaneous Meetings	\$87.00/hour
Site Visits During Installation	\$87.00/hour
Project Management	\$87.00/hour
Final Inspection	\$87.00/hour
Travel Time	\$58.00/hr
Mileage Reimbursement	\$0.32/mile
Travel Reimbursement (Overnight Accommodations, Meals, etc)	Receipted Costs
Project Related Required Purchases or Expenses	Receipted Costs
Design or Engineering Activities Not Covered Above	\$87.00/hour

TCE PRICE SCHEDULE FOR STATE PROJECTS

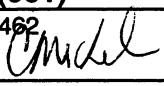
POSITION TITLE	PRICE
Registered Communication Distribution Designer	\$87.00/hour
Project Manager	\$87.00/hour
Consultant	\$87.00/hour
Field Technician	\$69.60/hour
Systems Specialist	\$110.20/hour
Outside Plant Designer	\$87.00/hour
Professional Engineer	\$133.40/hour
Broadband Designer	\$87.00/hour
CAD Drafter	\$52.20/hour
Clerical Support	\$34.80/hour
Printer time	\$52.20/hour
Travel Time	\$58.00/hour
Mileage Reimbursement	\$0.32/mile
Travel Reimbursement (Overnight Accommodations, Meals, etc)	Receipted Costs
Project-Related Required Purchases and Expenses	Receipted Costs

AUTHORITY: Act 431 of 1984
COMPLETION: Required
PENALTY: Failure to deliver in accordance with Contract terms
and conditions and this notice, may be considered in default
of Contract.

STATE OF MICHIGAN
DEPARTMENT OF MANAGEMENT AND BUDGET
OFFICE OF PURCHASING
P.O. BOX 30026, LANSING, MI 48909
OR
530 W. ALLEGAN, LANSING, MI 48933

September 14, 2000

CHANGE NOTICE NO. 6
TO
CONTRACT NO. 071B8000912
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF VENDOR (T C E) TeleCommunication Engineers, Inc. 1172 S. M-13 Lennon, MI 48449	TELEPHONE John Foster (810) 621-4000 Ext. 105
	VENDOR NUMBER/MAIL CODE (2) 38-27758176 (001)
	BUYER (517) 335-0462 Christine Michel 
Contract Administrator: Stan Patterson Engineering & Design Services for Data & Communications Cabling - DMB/OCAT & Statewide	
CONTRACT PERIOD: From: July 21, 1998 To: July 20, 2001	
TERMS Net 30	SHIPMENT N/A
F.O.B. N/A	SHIPPED FROM N/A
MINIMUM DELIVERY REQUIREMENTS N/A	
MISCELLANEOUS INFORMATION:	

NATURE OF CHANGE (S):

Effective immediately, this contract is hereby **INCREASED** by \$38,000.00 to allow for completion of the DMB OITS Design Project.

AUTHORITY/REASON:

Agency request, vendor concurrence.

INCREASE: \$38,000.00

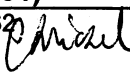
TOTAL REVISED ESTIMATED CONTRACT VALUE: \$1,198,000.00

AUTHORITY: Act 431 of 1984
COMPLETION: Required
PENALTY: Failure to deliver in accordance with Contract terms
and conditions and this notice, may be considered in default
of Contract.

STATE OF MICHIGAN
DEPARTMENT OF MANAGEMENT AND BUDGET
OFFICE OF PURCHASING
P.O. BOX 30026, LANSING, MI 48909
OR
530 W. ALLEGAN, LANSING, MI 48933

May 11, 2000

CHANGE NOTICE NO. 5
TO
CONTRACT NO. 071B8000912
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF VENDOR		TELEPHONE John Foster (810) 621-4000 Ext. 105
(T C E) TeleCommunication Engineers, Inc. 1172 S. M-13 Lennon, MI 48449		VENDOR NUMBER/MAIL CODE (2) 38-27758176 (001)
		BUYER (517) 335-0462 Christine Michel 
NIGP #725-23 Contract Administrator: Stan Patterson CS-138 #		
Engineering & Design Services for Data & Communications Cabling - DMB/OCAT & Statewide		
CONTRACT PERIOD: From: July 21, 1998		To: July 20, 2001
TERMS	SHIPMENT	
Net 30	N/A	
F.O.B.	SHIPPED FROM	
N/A	N/A	
MINIMUM DELIVERY REQUIREMENTS		
N/A		
MISCELLANEOUS INFORMATION:		

NATURE OF CHANGE:

Effective immediately, the contract end date is hereby extended to July 20, 2001 with no change in contract pricing, terms, or conditions.

AUTHORITY/REASON:

Agency request, vendor letter.


ESTIMATED CONTRACT VALUE REMAINS: \$1,160,000.00

AUTHORITY: Act 431 of 1984
COMPLETION: Required
PENALTY: Failure to deliver in accordance with Contract terms
and conditions and this notice, may be considered in default
of Contract.

STATE OF MICHIGAN
DEPARTMENT OF MANAGEMENT AND BUDGET
OFFICE OF PURCHASING
P.O. BOX 30026, LANSING, MI 48909
OR
530 W. ALLEGAN, LANSING, MI 48933

April 26, 2000

CHANGE NOTICE NO. 4
TO
CONTRACT NO. 071B8000912
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF VENDOR		TELEPHONE John Foster (810) 621-4000 Ext. 105
(T C E) TeleCommunication Engineers, Inc. 1172 S. M-13 Lennon, MI 48449		VENDOR NUMBER/MAIL CODE (2) 38-27758176 (001)
		BUYER (517) 335-0462 Christine Michel 
NIGP #725-23 Contract Administrator: Stan Patterson		CS-138 #
Engineering & Design Services for Data & Communications Cabling - DMB/OCAT & Statewide		
CONTRACT PERIOD: From: July 21, 1998		To: July 20, 2000
TERMS Net 30	SHIPMENT N/A	
F.O.B. N/A	SHIPPED FROM N/A	
MINIMUM DELIVERY REQUIREMENTS N/A		
MISCELLANEOUS INFORMATION:		

NATURE OF CHANGE:

Effective immediately, the value of this contract is hereby increased by \$25,000.00 to allow for completion of the comprehensive Statewide communications network design.

AUTHORITY/REASON:

Agency request-Peyman Zand; vendor agreement.

INCREASE: \$25,000.00

ESTIMATED CONTRACT VALUE REMAINS: \$1,160,000.00

AUTHORITY: Act 431 of 1984
COMPLETION: Required
PENALTY: Failure to deliver in accordance with Contract terms
and conditions and this notice, may be considered in default
of Contract.

STATE OF MICHIGAN
DEPARTMENT OF MANAGEMENT AND BUDGET
OFFICE OF PURCHASING
P.O. BOX 30026, LANSING, MI 48909
OR
530 W. ALLEGAN, LANSING, MI 48933

March 20, 2000

CHANGE NOTICE NO. 3
TO
CONTRACT NO. 071B8000912
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF VENDOR		TELEPHONE John Foster (810) 621-4000 Ext. 105
(T C E) TeleCommunication Engineers, Inc.		VENDOR NUMBER/MAIL CODE
1172 S. M-13		(2) 38-27758176 (001)
Lennon, MI 48449		BUYER (517) 335-0462 Christine Michel
NIGP #725-23	Contract Administrator: Stan Patterson	CS-138 #
Engineering & Design Services for Data & Communications Cabling - DMB/OCAT & Statewide		
CONTRACT PERIOD:	From: July 21, 1998	To: July 20, 2000
TERMS	SHIPMENT	
Net 30	N/A	
F.O.B.	SHIPPED FROM	
N/A	N/A	
MINIMUM DELIVERY REQUIREMENTS		
N/A		
MISCELLANEOUS INFORMATION:		

NATURE OF CHANGE:

Effective immediately, the value of this contract is hereby increased by \$135,000.00 to allow for MIN to complete a Statewide communications network design.

AUTHORITY/REASON:

Agency request; vendor agreement.

INCREASE: \$135,000.00

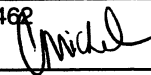
ESTIMATED CONTRACT VALUE REMAINS: \$1,135,000.00

AUTHORITY: Act 431 of 1984
COMPLETION: Required
PENALTY: Failure to deliver in accordance with Contract terms
and conditions and this notice, may be considered in default
of Contract.

STATE OF MICHIGAN
DEPARTMENT OF MANAGEMENT AND BUDGET
OFFICE OF PURCHASING
P.O. BOX 30026, LANSING, MI 48909
OR
530 W. ALLEGAN, LANSING, MI 48933

January 5, 2000

CHANGE NOTICE NO. 2
TO
CONTRACT NO. 071B8000912
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF VENDOR (T C E) TeleCommunication Engineers, Inc. 1172 S. M-13 Lennon, MI 48449		TELEPHONE John Foster (810) 621-4000 Ext. 105
		VENDOR NUMBER/MAIL CODE (2) 38-27758176 (001)
		BUYER (517) 335-0462 Christine Michel 
NIGP #725-23 Contract Administrator: Stan Patterson		CS-138 #
Engineering & Design Services for Data & Communications Cabling - DMB/OCAT & Statewide		
CONTRACT PERIOD: From: July 21, 1998		To: July 20, 2000
TERMS Net 30	SHIPMENT N/A	
F.O.B. N/A	SHIPPED FROM N/A	
MINIMUM DELIVERY REQUIREMENTS N/A		
MISCELLANEOUS INFORMATION:		

NATURE OF CHANGE:

Effective immediately, this contract is hereby extended to local units of government through the Extended Purchasing Program.

AUTHORITY/REASON:

Agency/vendor request.

ESTIMATED CONTRACT VALUE REMAINS: \$1,000,000.00

STATE OF MICHIGAN
DEPARTMENT OF MANAGEMENT AND BUDGET
OFFICE OF PURCHASING
P.O. BOX 30026, LANSING, MI 48909
OR
530 W. ALLEGAN, LANSING, MI 48933

October 19, 1999

CHANGE NOTICE NO. 1
TO
CONTRACT NO. 071B8000912

between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF VENDOR		TELEPHONE John Foster (810) 621-4000 Ext. 105		
(T C E) TeleCommunication Engineers, Inc. 1172 S. M-13 Lennon, MI 48449		VENDOR NUMBER/MAIL CODE (2) 38-27758176 (001)		
		BUYER (517) 335-0462 Christine Michel <i>Christine Michel</i>		
NIGP #725-23 Contract Administrator: Stan Patterson		CS-138 #		
Engineering & Design Services for Data & Communications Cabling - DMB/OCAT & Statewide				
CONTRACT PERIOD: From: July 21, 1998		To: July 20, 2000		
TERMS Net 30	SHIPMENT N/A			
F.O.B. N/A	SHIPPED FROM N/A			
MINIMUM DELIVERY REQUIREMENTS N/A				
MISCELLANEOUS INFORMATION:				

NATURE OF CHANGE:

Effective immediately, the attached modifications are hereby incorporated into this contract with no overall contract value changes or modifications in terms and conditions.

AUTHORITY/REASON:

Agency request, vendor letter.

ESTIMATED CONTRACT VALUE REMAINS: **\$1,000,000.00**

PRICE SCHEDULE FOR AGENCY PROJECT

POSITION TITLE	PRICE
Registered Communication Distribution Designer	\$75.00/hour
Project Manager	\$75.00/hour
Field Technician	\$60.00/hour
Systems Specialist	\$95.00/hour
CAD Drafter	\$45.00/hour
Clerical Support	\$30.00/hour
Printer time	\$45.00/hour
Travel Time	\$50.00/hour
Mileage Reimbursement	\$0.32/mile
Travel Reimbursement (Overnight Accommodations, Meals, etc)	Receipted Costs
Project-Related Required Purchases and Expenses	Receipted Costs

STATE OF MICHIGAN
DEPARTMENT OF MANAGEMENT AND BUDGET
OFFICE OF PURCHASING
P.O. BOX 30026, LANSING, MI 48909
OR
530 W. ALLEGAN, LANSING, MI 48933

August 11, 1998

NOTICE
OF
CONTRACT AGREEMENT 071B8000912
between
THE STATE OF MICHIGAN
and

NAME & ADDRESS OF VENDOR		TELEPHONE John Foster (810) 621-4000 Ext. 105
(T C E) TeleCommunication Engineers, Inc. 1172 S. M-13 Lennon, MI 48449		VENDOR NUMBER/MAIL CODE (2) 38-27758176 (001)
		BUYER (517) 335-0462 Christine Michel
NIGP #725-23 Contract Administrator: Stan Patterson CS-138 #		
Engineering & Design Services for Data & Communications Cabling - DMB/OCAT & Statewide		
CONTRACT PERIOD: From: July 21, 1998		To: July 20, 2000
TERMS Net 30	SHIPMENT N/A	
F.O.B. N/A	SHIPPED FROM N/A	
MINIMUM DELIVERY REQUIREMENTS N/A		
MISCELLANEOUS INFORMATION:		

The terms and conditions of this Contract are those of ITB #07118000165, this Contract Agreement and the vendor's quote dated 3/3/98. In the event of any conflicts between the specifications, terms and conditions indicated by the State and those indicated by the vendor, those of the State take precedence.

Two year contract with one year extension options at State's discretion.

ESTIMATED CONTRACT VALUE: \$1,000,000.00

SECTION I GENERAL INFORMATION

I-A PURPOSE

The purpose of this contract is to provide the Department of Management and Budget, Office of Computing and Telecommunications with the services of an engineering firm with a State of Michigan registered engineer and a RCDD which holds an active certification on staff, for providing communication infrastructure design, engineering, project management and quality verification services. These services may be utilized for, but not limited to, cabling backbone and infrastructure projects taking place throughout the State of Michigan.

The contract awarded from this solicitation is Unit Priced for the duration of this contract. Unit pricing included in the contract covers design, project management and quality inspection charges.

II-A ISSUING OFFICE

This Blanket Purchase Order (BPO) is issued by the State of Michigan, Department of Management and Budget (DMB), Office of Purchasing, hereafter known as the Office of Purchasing, for the State of Michigan, Office of Computing and Telecommunications. Where actions are a combination of those of the Office of Purchasing and OCAT, the authority will be known as the State.

The Office of Purchasing is the sole point of contact in the State with regard to all procurement and contractual matters relating to the services described herein. The Office of Purchasing is the only office authorized to change, modify, amend, alter, clarify, etc., the prices, specifications, terms, and conditions of this contract. The OFFICE OF PURCHASING will remain the SOLE POINT OF CONTACT throughout the procurement process, until such time as the Director of Purchasing shall direct otherwise in writing. See Paragraph I-C below. All communications concerning this procurement must be addressed to:

Christine Michel, Buyer Specialist
DMB, Office of Purchasing
2nd Floor, Mason Building
P.O. Box 30026
Lansing, MI 48909

III-A CONTRACT ADMINISTRATOR

- A. Upon receipt at the Office of Purchasing of the properly executed Contract Agreement, it is anticipated that the Director of Purchasing will direct that the person named below be authorized to administer the Contract on a day-to-day basis during the term of the Contract. However, administration of any contract resulting from this Invitation implies no authority to change, modify, clarify, amend, or otherwise alter the terms, conditions, and specifications of such contract. That authority is retained by the Office of Purchasing. The Contract Administrator for this project is:

Don Eitniar
Department of Management & Budget
Office of Computing and Telecommunications
3rd Floor, Ottawa Building
P.O. Box 30026
Lansing, MI 48909

SECTION II CONTRACTUAL SERVICES TERMS AND CONDITIONS

The following is the CONTRACT to be used to govern the services described in Request for Quotation No. 071I8000347 for the State of Michigan, Department of Management and Budget.

The following are MANDATORY TERMS to which the CONTRACTOR MUST agree without word modification.

The activities of the proposed contract will cover a twenty four (24) month period. The contract has the option of one (1) one year extension and will be extended at the discretion of the State. No price increases will be permitted during any given two (2) year term. Contract prices will be reviewed and may be renegotiated at the anniversary date of each extension at the discretion of the State.

II-A CONTRACT PAYMENT

CONTRACT PAYMENT SCHEDULE

The specific payment schedule for any CONTRACT(s) entered into as the result of this ITB will be mutually agreed upon by the State and the CONTRACTOR(s). The schedule should show payment amount and should reflect actual work done by the payment dates, less any penalty cost charges accrued by those dates. Twenty (20) percent of the total project price will be held for final payment. Final payment will be made only after the State Contract Administrator has determined the project is 100% complete and meets or exceeds all applicable codes and standards. "Project" in this paragraph means a single complete campus. As a general policy, statements shall be forwarded to the designated representative by the 15th day of the following month. BIDDERS PLEASE NOTE: Rates quoted in response to this Request are firm for the duration of the proposed CONTRACT; no increases will be permitted.

II-B ACCOUNTING RECORDS

The CONTRACTOR will be required to maintain all pertinent financial and accounting records and evidence pertaining to the CONTRACT in accordance with generally accepted principles of accounting and other procedures specified by the State of Michigan. Financial and accounting records shall be made available, upon request, to the State of Michigan, its designees, or the Michigan Department of Auditor General at any time during the CONTRACT period and any extension thereof, and for three (3) years from expiration date and final payment on the CONTRACT or extension thereof.

II-C INDEMNIFICATION

A. General Indemnification

The CONTRACTOR shall indemnify, defend and hold harmless the State, its departments, divisions, agencies, sections, commissions, officers, employees and agents from and against all losses, liabilities, penalties, fines, damages and claims (including taxes), and all related costs and expenses (including reasonable attorneys' fees and disbursements and costs of investigation, litigation, settlement, judgments, interest and penalties), arising from or in connection with any of the following:

- (1) any claim, demand, action, citation or legal proceeding against the State, its employees and agents arising out of or resulting from (1) the product provided or (2) performance of the work, duties, responsibilities, actions or omissions of the CONTRACTOR or any of its subcontractors under this CONTRACT;
- (2) any claim, demand, action, citation or legal proceeding against the State, its employees and agents arising out of or resulting from a breach by the CONTRACTOR of any representation or warranty made by the CONTRACTOR in the CONTRACT;
- (3) any claim, demand, action, citation or legal proceeding against the State, its employees and agents arising out of or related to occurrences that the CONTRACTOR is required to insure against as provided for in this CONTRACT;
- (4) any claim, demand, action, citation or legal proceeding against the State, its employees and agents arising out of or resulting from the death or bodily injury of any person, or the damage, loss or destruction of any real or tangible personal property, in connection with the performance of services by the CONTRACTOR, by any of its subcontractors, by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable; provided, however, that this indemnification obligation shall not apply to the extent, if any, that such death, bodily injury or property damage is caused solely by the negligence or reckless or intentional wrongful conduct of the State;
- (5) any claim, demand, action, citation or legal proceeding against the State, its employees and agents which results from an act or omission of the CONTRACTOR or any of its subcontractors in its or their capacity as an employer of a person.

B. Patent/Copyright Infringement Indemnification

The CONTRACTOR shall indemnify, defend and hold harmless the State, its employees and agents from and against all losses, liabilities, damages (including taxes), and all related costs and expenses (including reasonable attorneys' fees and disbursements and costs of investigation, litigation, settlement, judgments, interest and penalties) incurred in connection with any action or proceeding threatened or brought against the State to the extent that such action or proceeding is based on a claim that any piece of equipment, software, commodity or service supplied by the CONTRACTOR or its subcontractors, or the operation of such equipment, software, commodity or service, or the use or reproduction of any documentation provided with such equipment, software, commodity or service infringes any United States or foreign patent, copyright, trade secret or other proprietary right of any person or entity, which right is enforceable under the laws of the United States. In addition, should the equipment, software, commodity, or service, or the operation thereof, become or in the Contractor's opinion be likely to become the subject of a claim of infringement, the CONTRACTOR shall at the Contractor's sole expense (i) procure for the State the right to continue using the equipment, software, commodity or service or, if such option is not reasonably available to the CONTRACTOR, (ii) replace or modify the same with equipment, software, commodity or service of equivalent function and performance so that it becomes non-infringing, or, if such option is not reasonably available to CONTRACTOR, (iii) accept its return by the State with appropriate credits to the State against the Contractor's charges and reimburse the State for any losses or costs incurred as a consequence of the State ceasing its use and returning it.

In any and all claims against the State of Michigan, or any of its agents or employees, by any employee of the CONTRACTOR or any of its subcontractors, the indemnification obligation under the CONTRACT shall not be limited in any way by the amount or type of damages, compensation or benefits payable by or for the CONTRACTOR or any of its subcontractors under worker's disability compensation acts, disability benefit acts or other employee benefit acts. This indemnification clause is intended to be comprehensive. Any overlap in subclauses, or the fact that greater specificity is provided as to some categories of risk, is not intended to limit the scope of indemnification under any other subclauses.

II-D CONTRACTOR'S LIABILITY INSURANCE

The CONTRACTOR shall purchase and maintain such insurance as will protect him from claims set forth below which may arise out of or result from the CONTRACTOR's operations under the CONTRACT (Purchase Order), whether such operations be by himself or by any Subcontractor or by anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable:

- (1) Claims under workers' disability compensation, disability benefit and other similar employee benefit act. A non-resident CONTRACTOR shall have insurance for benefits payable under Michigan's Workers' Disability Compensation Law for any employee resident of and hired in Michigan; and as respects any other employee protected by workers' disability compensation laws of any other state the CONTRACTOR shall have insurance or participate in a mandatory state fund to cover the benefits payable to any such employee.
- (2) Claims for damages because of bodily injury, occupational sickness or disease, or death of his employees.
- (3) Claims for damages because of bodily injury, sickness or disease, or death of any person other than his employees, subject to limits of liability of not less than \$300,000 each occurrence and, when applicable \$1,000,000 annual aggregate, for non-automobile hazards and as required by law for automobile hazards.
- (4) Claims for damages because of injury to or destruction of tangible property, including loss of use resulting therefrom, subject to a limit of liability of not less than \$100,000 each occurrence for non-automobile hazards and as required by law for automobile hazards.
- (5) Insurance for Subparagraphs (3) and (4) non-automobile hazards on a combined single limit of liability basis shall not be less than \$300,000 each occurrence and when applicable, \$1,000,000 annual aggregate.

The insurance shall be written for not less than any limits of liability herein specified or required by law, whichever is greater, and shall include contractual liability insurance as applicable to the CONTRACTOR's obligations under the Indemnification clause of the CONTRACT (Purchase Order).

BEFORE STARTING WORK THE CONTRACTOR MUST FURNISH TO THE DIRECTOR OF THE OFFICE OF PURCHASING, CERTIFICATE(S) OF INSURANCE VERIFYING LIABILITY COVERAGE. THE CONTRACT OR PURCHASE ORDER NO. MUST BE SHOWN ON THE CERTIFICATE OF INSURANCE TO ASSURE CORRECT FILING. These Certificates shall contain a provision that coverages afforded under the policies will not be canceled until at least fifteen days prior written notice bearing the CONTRACT Number or Purchase Order Number has been given to the Director of Purchasing.

II-E CANCELLATION

- (a) The State may cancel the Contract for default of the Contractor. Default is defined as the failure of the Contractor to fulfill the obligations of the quotation or Contract. In case of default by the Contractor, the State may immediately and/or upon 30 days prior written notice to the Contractor cancel the Contract without further liability to the State, its departments, divisions, agencies, sections,

commissions, officers, agents and employees, and procure the services from other sources, and hold the Contractor responsible for any excess costs occasioned thereby.

- (b) The State may cancel the Contract in the event the State no longer needs the services or products specified in the Contract, or in the event program changes, changes in laws, rules or regulations, relocation of offices occur, or the State determines that statewide implementation of the Contract is not feasible, or if prices for additional services requested by the State are not acceptable to the State. The State may cancel the Contract without further liability to the State, its departments, divisions, agencies, sections, commissions, officers, agents and employees by giving the Contractor written notice of such cancellation 30 days prior to the date of cancellation.
- (c) The State may cancel the Contract for lack of funding. The Contractor acknowledges that, if this Contract extends for several fiscal years, continuation of this Contract is subject to appropriation of funds for this project. If funds to enable the State to effect continued payment under this Contract are not appropriated or otherwise made available, the State shall have the right to terminate this Contract without penalty at the end of the last period for which funds have been appropriated or otherwise made available by giving written notice of termination to the Contractor. The State shall give the Contractor written notice of such non-appropriation within 30 days after it receives notice of such non-appropriation.
- (d) The State may immediately cancel the Contract without further liability to the State its departments, divisions, agencies, sections, commissions, officers, agents and employees if the Contractor, an officer of the Contractor, or an owner of a 25% or greater share of the Contractor, is convicted of a criminal offense incident to the application for or performance of a State, public or private Contract or subcontract; or convicted of a criminal offense including but not limited to any of the following: embezzlement, theft, forgery, bribery, falsification or destruction of records, receiving stolen property, attempting to influence a public employee to breach the ethical conduct standards for State of Michigan employees; convicted under state or federal antitrust statutes; or convicted of any other criminal offense which in the sole discretion of the State, reflects on the Contractor's business integrity.
- (e) The State may immediately cancel the Contract in whole or in part by giving notice of termination to the Contractor if any final administrative or judicial decision or adjudication disapproves a previously approved request for purchase of personal services pursuant to Constitution 1963, Article 11, Section 5, and Civil Service Rule 4-6.
- (f) The State may, with 30 days written notice to the Contractor, cancel the Contract in the event prices proposed for Contract modification/extension are unacceptable to the State. See Sections I-P, **Price Proposal**, and I-S, **Modification of Service**

II-F ASSIGNMENT

The Contractor shall not have the right to assign this Contract or to assign or delegate any of its duties or obligations under this Contract to any other party (whether by operation of law or otherwise), without the prior written consent of the State. Any purported assignment in violation of this Section shall be null and void. Further, the Contractor may not assign the right to receive money due under the Contract without the prior written consent of the State Purchasing Director.

II-G DELEGATION

The Contractor shall not delegate any duties or obligations under this Contract to a subcontractor other than a subcontractor named in the bid unless the State Purchasing Director has given written consent to the delegation.

II-H NON-DISCRIMINATION CLAUSE

In the performance of any Contract or purchase order resulting herefrom, the bidder agrees not to discriminate against any employee or applicant for employment, with respect to their hire, tenure, terms, conditions or privileges of employment, or any matter directly or indirectly related to employment, because of race, color, religion, national origin, ancestry, age, sex, height, weight, marital status, physical or mental handicap or disability. The bidder further agrees that every subcontract entered into for the performance of any Contract or purchase order resulting herefrom will contain a provision requiring non-discrimination in employment, as herein specified, binding upon each subcontractor. This covenant is required pursuant to the Elliot Larsen Civil Rights Act, 1976 Public Act 453, as amended, MCL 37.2201, *et seq*, and the Michigan Handicapper's Civil Rights Act, 1976 Public Act 220, as amended, MCL 37.1101, *et seq*, and any breach thereof may be regarded as a material breach of the Contract or purchase order.

II-I UNFAIR LABOR PRACTICES

Pursuant to 1980 Public Act 278, as amended, MCL 423.231, *et seq*, the State shall not award a Contract or subcontract to an employer whose name appears in the current register of employers failing to correct an unfair labor practice compiled pursuant to Section 2 of the Act. A Contractor of the State, in relation to the Contract, shall not enter into a Contract with a subcontractor, manufacturer, or supplier whose name appears in this register. Pursuant to Section 4 of 1980 Public Act 278, MCL 423.324, the State may void any Contract if, subsequent to award of the Contract, the name of the Contractor as an employer, or the name of the subcontractor, manufacturer or supplier of the Contractor appears in the register.

II-H GENERAL

The following constitute the complete and exclusive statement of the agreement between the parties as it relates to this transaction:

- A. State ITB and any Addenda thereto;
- B. CONTRACTOR's response(s) to the State's ITB and Addenda

The failure of a party to insist upon strict adherence to any term of a CONTRACT resulting from this ITB shall not be considered a waiver or deprive the party of the right thereafter to insist upon strict adherence to that term, or any other term, of the CONTRACT.

Any CONTRACT resulting from this ITB may not be modified, amended, extended, or augmented, except by a writing executed by the parties hereto, and any breach or default by a party shall not be waived or released other than in writing signed by the other party.

Each provision of this CONTRACT shall be deemed to be severable from all other provisions of the CONTRACT and, if one or more of the provisions of the CONTRACT shall be declared invalid, the remaining provisions of the CONTRACT shall remain in full force and effect.

This CONTRACT shall in all respects be governed by, and construed in accordance with, the laws of the State of Michigan.

End of Section II

SECTION III WORK STATEMENT

III-A PROBLEM STATEMENT

The Department of Management and Budget, requires communication infrastructure engineering, design, project management and quality assurance services for various projects across the state of Michigan. The communication infrastructure may include, but not limited to, structured cable systems, data, voice, video, riser, antennas and OSP.

III-B OBJECTIVES

General:

The Department of Management and Budget, as a result of this ITB, is to have on contract an engineering firm, with a State of Michigan registered engineer and RCDD with current certification on staff, capable of performing engineering, design, project management and quality assurance services for communication infrastructure throughout the state of Michigan. The DMB will provide to the vendor the State's needs and the vendor is to then fulfill these needs in a reasonable and timely manner. Needs will vary from time to time throughout the state.

Specific:

The responding vendor is to be an engineering company with a professional engineer registered with the State of Michigan, Department of Consumer and Industry Services, on staff. The vendor is to also have a RCDD with active certification on staff. The vendor is to provide, but not limited to, voice, data and video design services along with quality assurance services. All of these services are to be based on, but not limited to, TIA/EIA, National Electric Code and BICSI standards.

It is the State's requirement that the vendor perform services as required on individual requests. It is possible that vendor may be required to contact and meet with various agencies of the State. It is also possible that total, partial or no vendor services may be requested. The vendor may be required to perform quality verification audits on the material and installation provider. Written reports of all meetings attended and/or quality audits performed by the vendor must be turned over to the State's contract manager. Section III-D outlines tasks which may or may not be required by the vendor. The State will make determination of which services are required on a job by job basis.

It is not to be assumed by vendor that they will have exclusivity on the functions stated above and/or in Section III-D, nor are the functions stated above and/or in Section IIID all inclusive of what the vendor may be called upon to do. It is possible that the State may decide to undertake some of the projects in-house.

III-C Vendor Qualifications:

The selected vendor must be a professional engineering firm with an engineer on staff that is registered with the State of Michigan, Department of Consumer and Industry Services.

The selected vendor must be staffed with at least one Registered Communication Distribution Designer (RCDD). The RCDD must have been an RCDD for a minimum of five (5) years. Provide State of Michigan Department of Consumer and Industry Services engineers registration numbers and BICSI RCDD certification numbers. The RCDD must, at a minimum, review approve and certify with valid RCDD stamp, all designs, specifications and as-built drawings. It is preferred that the RCDD have a hands on role in all design processes.

The vendor must have in place a quality assurance organization which audits the vendors work for, but not limited to, accuracy, application of standards and clarity.

The vendor must have verifiable experience on projects in which the client was initiating a standard operating environment.

The vendor must have verifiable experience in projects that required a significant amount of re-hab work within existing buildings.

The vendor must have experience with leading edge technologies including, but not limited to:

- Centrex/PBX
- ISDN
- Fast Ethernet
- ATM
- Broadband and Compressed Digital Video

The vendor must have the capability of developing detailed work prints and as-builts. All work prints and as-builts will be in digital format (CAD). Certified work prints are required to be included as part of all specifications. Examples are to be included as part of your response.

The vendor should have Outside Plant Engineers on staff as the project may include the review of some campus/OSP facilities.

It is preferred that all vendor personnel be in-house, full time employees. If the vendor will be utilizing contract employees and/or subcontractors, identify such and services they will be providing. The State will have final authority as to

which subcontractors may be used by the vendor. The RCDD assigned to any State project must be an employee of the contractor.

The selected vendor shall have been actively engaged in supplying similar type services for a period of not less than five (5) years.

III-D TASKS

1. The following is a preliminary analysis of the major tasks involved for developing the end product of this project. The CONTRACTOR is not, however constrained from supplementing this listing with additional steps, subtasks or elements deemed necessary to permit the development of alternative approaches or the application of proprietary analytical techniques. It is the State's responsibility to select projects and work operations which will involve the contractor. The State will submit to the contractor in writing, the selected project, contractors involvement and requested schedule.
2. The vendor may be required to discuss the voice/data/video needs and requirements with the user agency's Departmental representative and review this detail with the appropriate DMB Telecommunications personnel.
3. The vendor may be required to make arrangements with the appropriate State contact people for the purpose of a site visit.
4. The vendor may be required to conduct a site visit to gather information required to perform design and engineering services.
5. The vendor may be required to perform design, engineering, quality assurance and project management functions.
6. The vendor may be required to submit design documents, drawings, specifications and recommendations to the proper DMB personnel.
7. The vendor will be required to provide quality assurance inspection reports on any auditable work performed by vendor.
8. Design documents such as specs., CAD drawings, as-builts and any other pertinent documentation will include, but not limited to, work station locations, cable routes, cable type, length of cable runs and connecting hardware. Documents containing similar information are required for any riser system and/or horizontal tie cables, antenna systems, etc.
9. Vendor specifications must be written in such a manner that the State approved issue of the documents can be used directly for material and installation bids. No changes and/or editing is to be required by the State or any other persons.

10. Vendor is to present specs., drawings and all pertinent information to the responsible DMB personnel for review and agreement on design, language and documents.
11. Vendor may be required to provide assistance at cable vendor bid walk through by showing contractors the requirements of the design and answering bidders questions. This will include a written record of all questions and answers being provided to the State contract administrator. The State contract administrator will be responsible to provide the "official" response to all questions posed by the cable vendors.
12. The vendor may be requested to perform quality inspections on work performed by the cable vendor. The State will determine which projects and at what time interval the quality audits are required. This may be during the cable installation process and/or upon completion of the cable installation process. Quality results are to be provided to the State upon completion of the inspections.
13. Upon completion of the installation, the engineering vendor shall review and/or provide certified as-built drawings and as-built specifications. Copies of the review results and/or engineering vendor generated as-built drawings and as-built specs are to be turned over to the DMB Telecommunications representative.
14. The vendor may be called upon to digitize State archived drawings which are maintained by the State.
15. All work performed by the vendor will conform to the latest Edition of the National Electric Code, the Building Code and all local codes and ordinances, as applicable. EIA/TIA Documents shall be adhered to during design activities. Methodologies outlined in the latest edition of the BICSI Telecommunications Distribution Methods Manual shall also be used during all design activities. Should conflicts exist with the foregoing, the authority having jurisdiction for enforcement will have the responsibility for making interpretation.
16. The following is a preliminary analysis of the major tasks involved for developing the end product of this project. The CONTRACTOR is not, however, constrained from supplementing this listing with additional steps, subtasks or elements deemed necessary to permit the development of alternative approaches or the application of proprietary analytical techniques.

III-E PROJECT CONTROL AND REPORTS

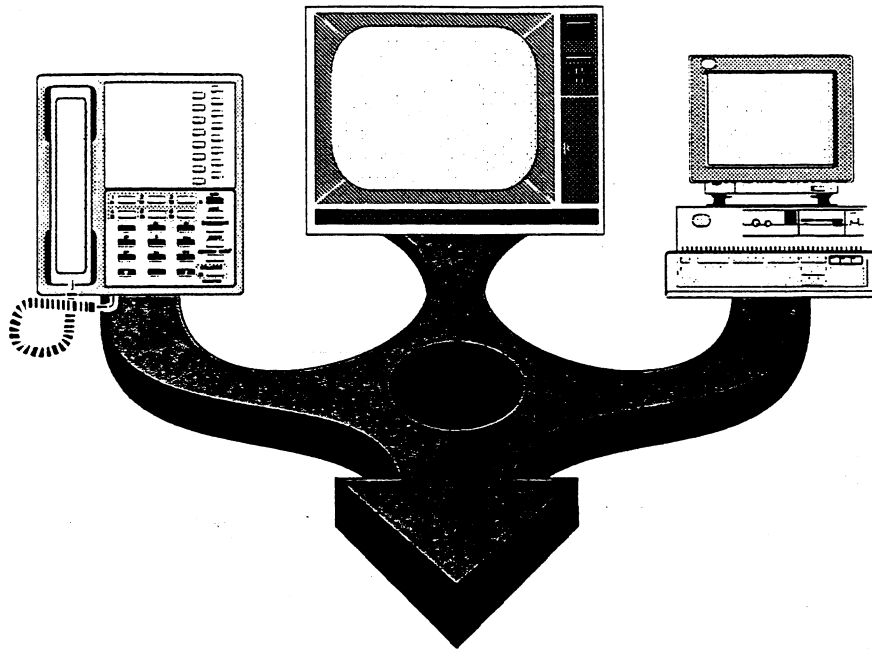
I. Project Control

- a. The CONTRACTOR will carry out this project under the direction and control of the Department of Management and Budget Contract Administrator or their duly assigned representative.
- b. Although there will be continuous liaison with the CONTRACTOR team, the DMB Contract Administrator or duly assigned representative will meet, as deemed necessary by the State, with the CONTRACTOR's project manager for the purpose of reviewing progress and providing necessary guidance to the CONTRACTOR in solving problems which arise.
- c. The CONTRACTOR will submit brief written summaries of progress which outline the work accomplished during the reporting period; work to be accomplished during the subsequent reporting period; problems, real or anticipated, which should be brought to the attention of the client agency's project director; and notification of any significant deviation from previously agreed-upon work plans. The frequency of the written summaries will depend upon the project particulars. The State will determine the frequency at which the summaries are necessary.
- d. Submit to the Department of Management and Budget the following:
 - (1) The CONTRACTOR's project organizational structure.
 - (2) The CONTRACTOR's staffing table with names and title of personnel assigned to the project. This must be in agreement with staffing of accepted proposal. Necessary substitutions due to change of employment status and other unforeseen circumstances may only be made with prior approval of the State.
 - (3) The sample project breakdown showing sub-projects, activities and tasks, and resources required and allocated to each.
 - (4) The time-phased plan in the form of a graphic display, showing each event, task, and decision point in your work plan.

2. Reports

Progress reports showing the status of the project in respect to the planned schedule are to be generated. The frequency of these reports is up to the DMB Contract Administrator. In-process and/or final quality verification reports covering the tasks performed on a particular project are to be submitted to the DMB Contract Administrator. The contents and design of the quality reports will be mutually agreed upon by the vendor and the DMB Contract Administrator.

End of Section III



State of Michigan

ITB Response

Bid Number 071I8000347

Prepared By:



**TeleCommunication
Engineers, Inc.**

TeleCommunication Engineers, Inc.

Response to:

State of Michigan – Invitation to Bid #071I8000347

IV-A Business Organization

TCE, Inc. dba TeleCommunication Engineers, Inc.
1172 S. M-13
Lennon, MI 48449

Corporation (Incorporated in the State of Michigan)

TeleCommunication Engineers will utilize all in-house staff to fulfill the requirements of this project. We currently have 3 RCDDs on staff, two of which have been RCDDs for over 5 years and cumulatively have in excess of 55 years in the industry.

Additionally, we have a large staff of design personnel, both for building infrastructure and Outside Plant facilities. All of our designs are drawn in digitized format by one of our six CAD drafters.

All work by our design teams will either be performed by an RCDD or at a minimum, reviewed and approved by one of our RCDDs. Though all design functions will be performed according to the most current industry standards, the work is still subjective based on the stated needs of the department for which the work is being performed. As such, quality assurance, as it relates to the design criteria, will be based on periodic reviews between the Project Leader and a specific user group. The focus of this review will be to ensure that the designer is understanding the needs of the user group and translating those needs into a viable design.

We also anticipate that final closeout of each individual project will be predicated on successful implementation based on a design that meets the user groups requirements. This process dictates that every project be reviewed for accuracy and quality in it's design before being approved for final payment.

IV-B Statement of the Problem

The State of Michigan is in need of a qualified Engineering firm to provide design, project management, testing and quality assurance for those buildings which require cabling infrastructure upgrades. Based on this statement, the selected vendor will be responsible for meeting with the users at a particular building and assisting in the needs analysis. This will determine requirements for the type of services to be provided within the building as well as the best infrastructure design to deliver these services. The physical locations and number of workstation outlets will also be determined at these meetings. Design specifications and drawings will then be prepared for the State's review. Once the State has approved the designs, the project can be bid. TeleCommunication Engineers would assist as necessary through the bid process. Upon selection of a qualified installation vendor, TeleCommunication Engineers, as the design firm, would instruct them on the design intent and insure that the installation adhered to the specifications both in terms of design and quality of workmanship.

After completion of the installation activities, TeleCommunication Engineers will inspect the work and make random tests on the infrastructure. These tests will serve to validate the installation. TeleCommunication Engineers will also gather any necessary as built documentation from the installation vendor to facilitate the creation of as built documents if needed.

Throughout the entire process, TeleCommunication Engineers will provide status to the State on all projects.

IV-C Management Summary

1. Narrative

TeleCommunication Engineers will provide services to the State of Michigan which include all items necessary to design, specify, manage and validate the installation of telecommunications cabling systems in those buildings the State requests under this contract.

Once a location is identified, we will begin with a meeting between TeleCommunication Engineers personnel and whatever End Users and/or Management personnel from the State's facility are required. At this meeting, all system requirements for voice, data and video distribution will be identified. Our personnel will then review any existing documentation and perform a site review with the local contact. Site specific information will be identified and recorded (i.e. workstation locations, existing closet locations, equipment rooms, building size and run distances, construction type, furniture layouts, etc.)

Based on these requirements, a system will be designed, specifications written and drawings produced. Pricing structures will be affected by several factors. The first and most important criterion is the type of construction of the building. A design with fully accessible ceiling space is much easier than one which requires conduit and/or surface mounted raceway. The next major criterion is the availability of building drawings. If we need to completely recreate building drawings, there will be significantly more time involved than if we have drawings already in a digitized format.

All work will be stamped by one of our staff RCDDs. The design documents will be in the format required by the State in order for them to be placed in a bid package, if necessary. Once the State has either received bids or chosen an installation vendor, TeleCommunication Engineers personnel will make on-site visits with the installation contractor to ensure that the work is performed to specification and that any necessary changes are approved and documented. Periodic inspection of work in progress will be performed by TeleCommunication Engineers personnel along with final inspection of the contractors work. Testing of the cabling system will be done on a random basis.

Once the work has been completed by the installation contractor, TeleCommunication Engineers will review and approve all test documentation and create any required as built documents. TeleCommunication Engineers will make recommendation to the State for final project closeout.

If individual projects are bid by the State, TeleCommunication Engineers personnel will assist in reviewing those bids as requested.

No work will be performed under this contract by a subcontractor. TeleCommunication Engineers will utilize in-house staff for all of the services listed above.

2. Technical Work Plans

The steps identified in the above narrative will be similar in each project. The hours associated with each will vary depending on the magnitude of the project. The following chart identifies each of the steps and provides an estimate of the person hours to complete each step. Appendix B provides a Pert chart showing a graphical representation of a typical project. Timeframes are intended only to demonstrate typical project activities. They are not actual project dates.

Task	Personnel	Estimated Hours
End User and Manager meetings	Designer/RCDD	2-4
Site surveys	Designer/RCDD	4-8 per site
Design services	Designer/RCDD	16-32 hours per floor
Review and approve all designs (RCDD)	Designer/RCDD	4
Documents (design specifications and drawings)	Designer/RCDD CAD Drafter Clerical	16 1 hour per 4,500 sq. ft. 16
Assistance with bid review	Designer/RCDD	8 w/ written recommendation
Vendor meeting subsequent to installation bid awards	Designer/RCDD	4 hours
Site visits as needed during installation phase	Designer	Dependent upon size and length of project
Final inspection of installation work	Designer/RCDD	2 hour per floor
Final review of installed systems test documentation	Designer/RCDD	2 hours
Recommendation of project closeout	Designer/RCDD	1 hour
Status reporting	Designer/RCDD	Dependent upon size and length of project

These hours are estimates. Actual hours are determined by the magnitude of the project. The above chart does not include any time allocated for travel to and

IV-D Bidder's Authorized Expediter

The following personnel will be authorized to expedite a contract with the State. All Can be reached at our Headquarters telephone number.

Gordon L. Caverly, RCDD	President
John C. Foster, RCDD	Vice President
Brandon M. Julian, RCDD	Manager, Technology Services

IV-D Additional Information and Comments

There are several things that make TeleCommunication Engineers truly unique in the industry. First and foremost is the depth of expertise which we bring to the industry. Second, we are a professional engineering firm. As such, architects and engineers have a certain comfort level when dealing with our firm. Third, we provide consulting services in all aspects of telecommunications encompassing voice, data, video and instructional delivery tools. Following is a description of our experience level in areas that are outside the scope of this project but that may be beneficial to the State.

1. Data networking:

TeleCommunication Engineers has been involved in LAN/WAN applications including Ethernet, Fast Ethernet, FDDI and Token Ring, ATM and SONET. Networks we have designed range from small local networks to very large county wide systems integrating with DEC Alpha, IBM AS/400, Data General and Prime minicomputers. We currently have two Registered Communication Distribution Designers with the LAN Specialist certification on staff. Both individuals have extensive training and experience in the LAN/WAN environment.

We have one CNE on staff and 3 CNAs. Our CNE is currently under contract to provide administrative support and troubleshooting for the Shiawassee RESD county wide Novell network. This network encompasses nine school districts and over 30 servers running Novell 4.x operating system.

2. Video networking

We currently have four Broadband Video designers on staff. These individuals have designed the cabling infrastructure and headend systems for many of our clients. Additionally, they have specified and built large CATV headend systems and military CATV and security systems. Collectively, they have over sixty five years experience in video networking.

3. Voice networking

The Project Leader, John Foster, spent 13 years developing voice systems for Ameritech. Systems ranged from small office, the Big 8 accounting firms and regional voice mail systems serving Ameritech offices in 5 states. He has experience in system design and implementation and has written numerous specifications for voice systems including PABX, Centrex and ISDN services.

TeleCommunication Engineers, Inc.

Response to:

State of Michigan – Invitation to Bid #07118000347

IV-F Price Proposal

1. Rates quoted in this response will be held firm for the duration of the 24 month contract.
2. We think we have devised a unit pricing scheme that is equitable to all parties. It takes into account size of the building requiring infrastructure design as well as the number of locations to be addressed. Both of these prices will be considered in determining the pricing of design services.

Additionally, we have identified certain singular events that will be charged for on an individual basis or by the hour as required or requested by the State.

Our prices are outlined in the unit pricing matrix enclosed in the separately sealed Price Proposal.

3. This cost and price analysis is submitted in full compliance with the provisions of the paragraph titled "Independent Price Determination" in Part I of the ITB to which this proposal is a response.

Appendix A – Pricing Proposal

Separately Sealed and Presented

MODEL "A" DESIGN DESCRIPTION:

TCE, Inc. will attend a preliminary manager's meeting to ensure that all questions as to the building design and scope of work are identified.

We will then do a site survey at the location to identify closet locations, existing cabling infrastructure and future cabling needs. During the visit, the building will be drawn with both existing and future locations to facilitate the creation of CAD drawings. The IDF will also be drawn for the same purposes.

Upon completion of the site survey, the new infrastructure layout will be designed with one Cat III and two Cat V cables to each outlet. The new design will then be incorporated in to the CAD drawings for bid purposes. A bill of materials and cost estimates will be provided at this time.

TCE will then provide the State with the design and written specifications to facilitate the bid process for the installation.

Throughout the entire installation process, TCE will be available for any questions or problems that may arise during installation. Upon completion of the installation, TCE will perform a post quality inspection of the project.

Once we receive the as-built drawings, TCE will then modify the CAD drawings and provide the State two copies of the final prints.

MODEL "B" DESIGN DESCRIPTION:

Initially TCE will be present at a meeting to go over some of the design considerations of the new job site, and ensure that all questions are answered. We will be looking at any existing architectural prints to see if any conduit has been put in place in anticipation of future technology.

A site survey will then be conducted to identify the locations of the voice and data drops and the location of the telecommunication closet. During the site survey drawings will be made to show physical locations of above said infrastructure.

After the site survey, the drawings of the physical locations will then be drawn in CAD. One of our on-staff RCDDs will then proceed to design the layout for the infrastructure of the building. At this time the Specifications will be written for bid purposes.

TCE will then provide the State with the full engineering package including, design, drawings, and specifications for the bid process.

Throughout the installation of the project, TCE will be available for questions about any concerns that arise. Upon completion of the project, TCE will be available for a post installation inspection to ensure quality of work.

MODEL "C" DESIGN DESCRIPTION:

Initial meetings will enable TCE personnel to obtain project prints and provide input as to the closet locations. One location will be identified as the MDF, while all others will be served as IDF locations. Additionally, the prints will enable TCE personnel to verify sleeves and any conduit that has been placed by the architectural firm in anticipation of technology. We will also be looking at the electrical design to ensure that adequate power has been supplied in each closet IDF and the MDF. Our design will identify and pick up any deficiencies.

The design will provide copper risers to each floor with copper tie pairs between closets. Multi-mode fiber optic riser cables will be identified with strands between floor closets. Horizontal distribution to each work location will be detailed utilizing outlet backboxes supplied as part of the electrical contractors bid. Depending on the State's requirements, each of the closets can be set up in a star configuration off of the MDF or we can design a distributed star with only one closet per floor directly connected to the MDF.

We will prepare all necessary drawings utilizing the architectural prints. They will be included as part of a complete specification package. The package will detail all closets, building entrance and layout of the MDF.

The entire design process for this type of new construction would likely be completed by an RCDD. There is generally a lot of coordination between TCE CAD personnel and the architectural/engineering staff. Our personnel will also coordinate with the Construction Management firm.

MODEL "D" DESIGN DESCRIPTION:

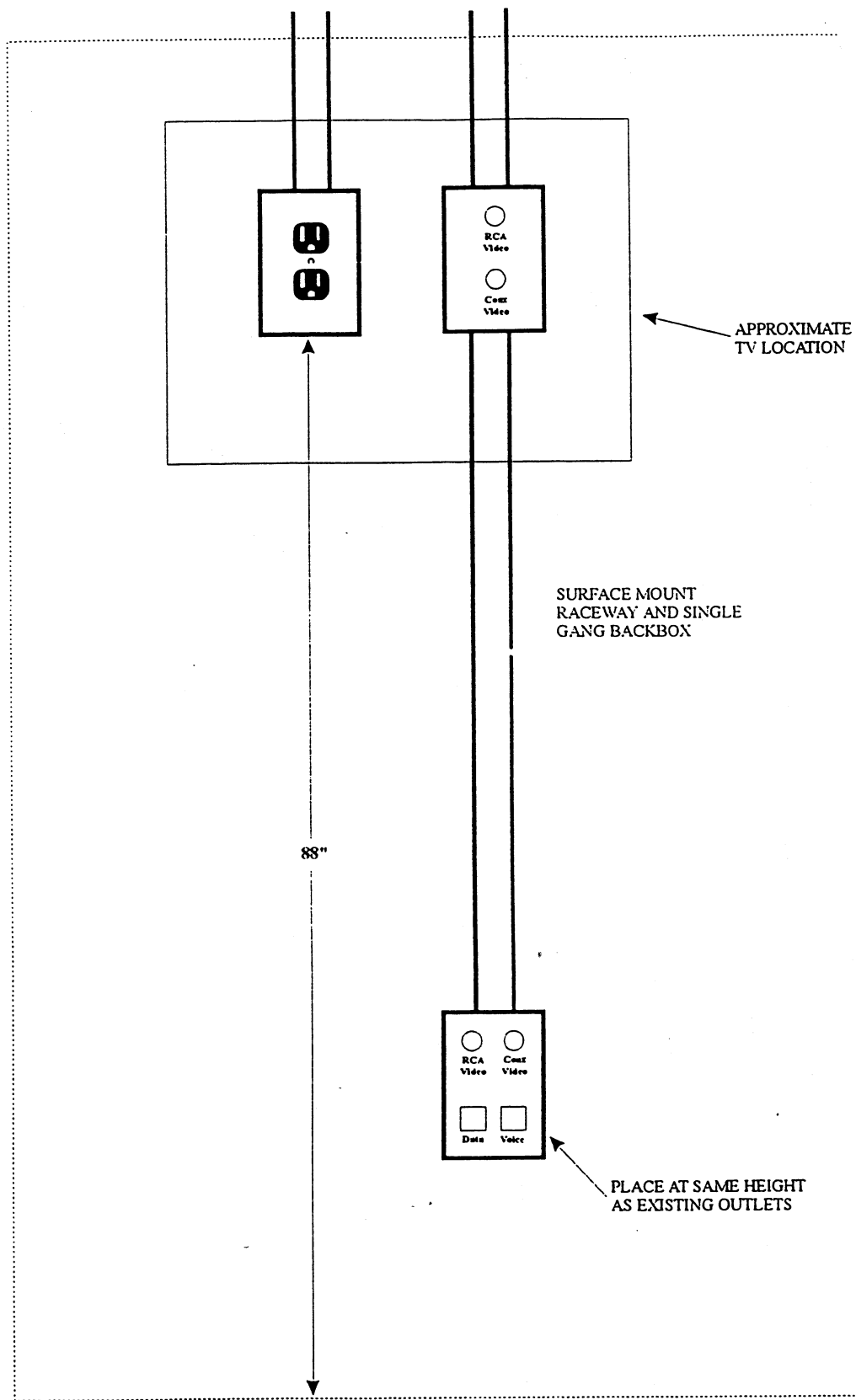
The initial meeting for this building will be a two phased operation. The first phase may be in the office or held at the building site. This project will entail a significant amount of time since there are no existing drawings for this building. The state's requirement for an evaluation will entail field personnel to actual create an inventory of cable facilities which would be mapped onto a set of digitized drawings for that particular building. This process would allow the RCDD in charge of the project to evaluate what cabling infrastructure would be suitable to retain and what infrastructure would we recommend for removal or replacement. TCE would identify any existing closets that were being used as an MDF or IDF location, any riser cables between the two floors, the conditions of the riser shafts and their viability for future usage and the general condition of ceiling, floor and wall access. At this field visit TCE would also identify the required measurements for setting up the initial design, identify the proposed locations for the future MDF or IDF closets and document any requirements for power, lighting or other peripheral requirements.

Upon completion of this field visit the RCDD would overlay a new design on the building. Our design would take advantage of any existing cabling infrastructure that may be available in the building, utilize the existing closets if they support the new design and specifications and consider the initial cutover plans that would be required to support the building staff during the transition phase to the new technology.

This project would involve an RCDD field assistant for inventory documentation, an RCDD for design, and a CAD drafting person to undertake the architectural layout of the building.

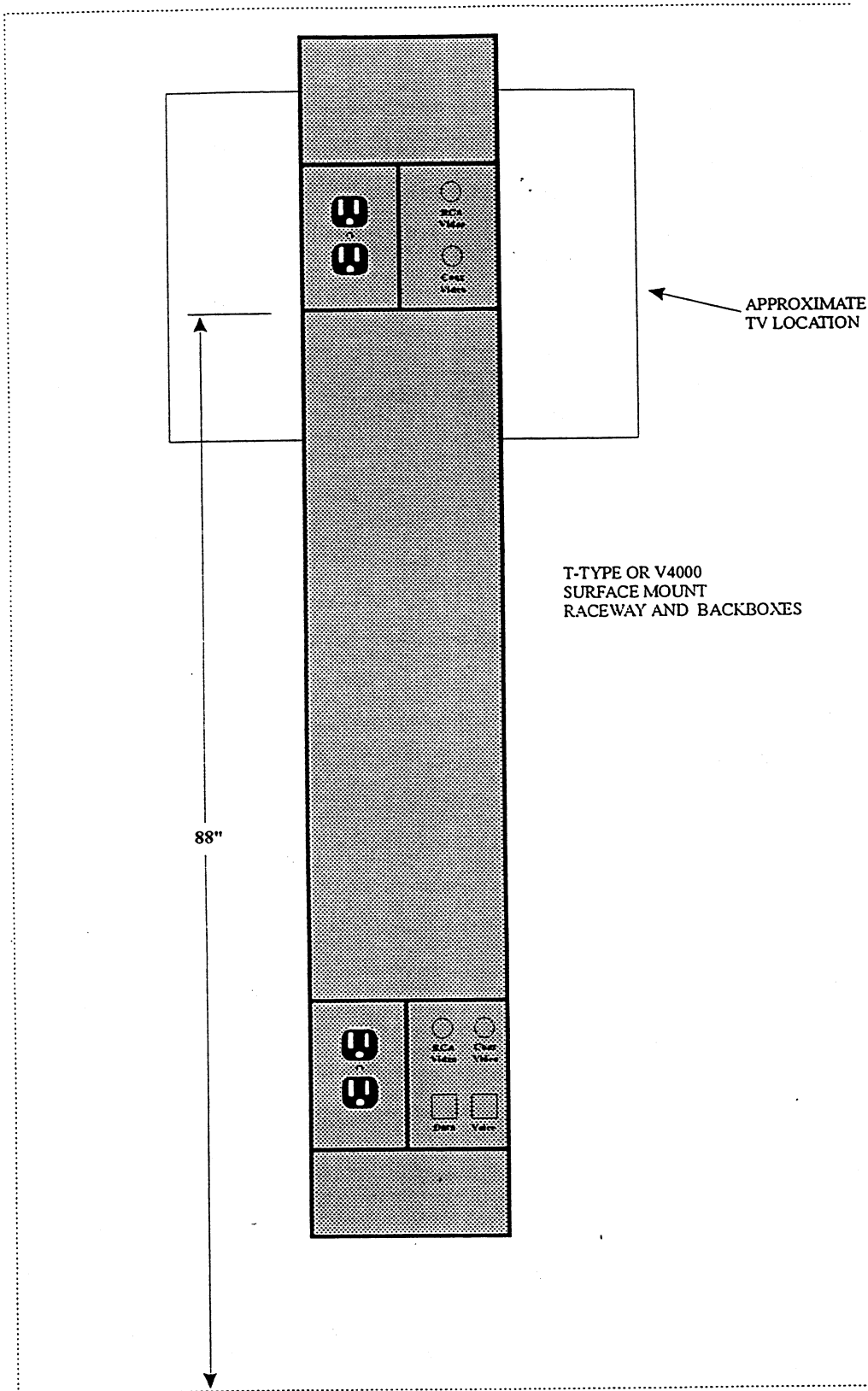
This project would finalize with a complete list of what material would be usable, what would have to be removed or replaced, recommendations for a new infrastructure design and a complete set of design drawings over-layed on a building layout plan with MDF & IDF closet layouts.

Appendix B
Technical Work Plan
Pert Chart



TYPICAL INSTRUCTIONAL RISER AND BACKBOX DETAIL

NOT TO SCALE



TYPICAL INSTRUCTIONAL RISER AND BACKBOX DETAIL

NOT TO SCALE

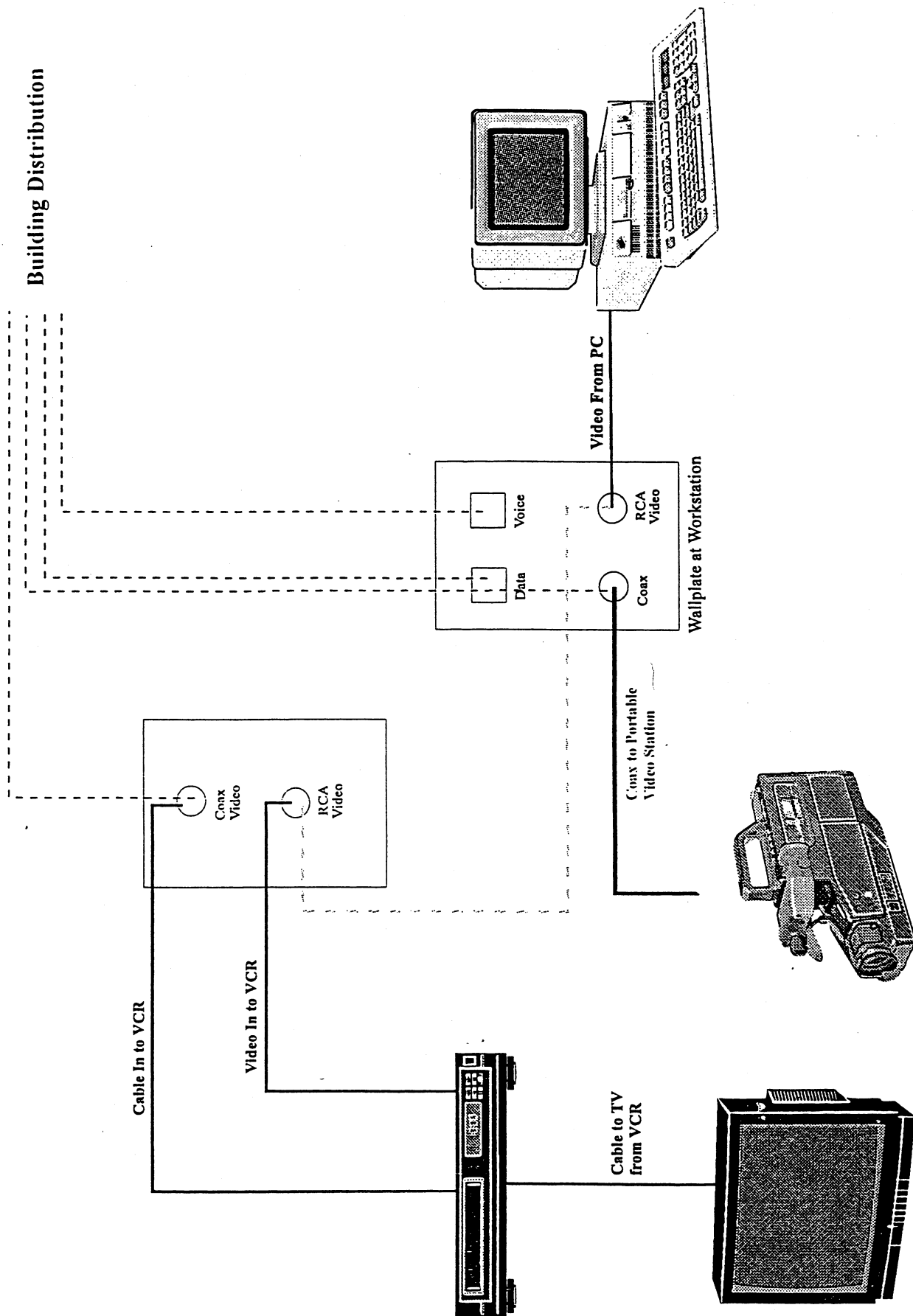
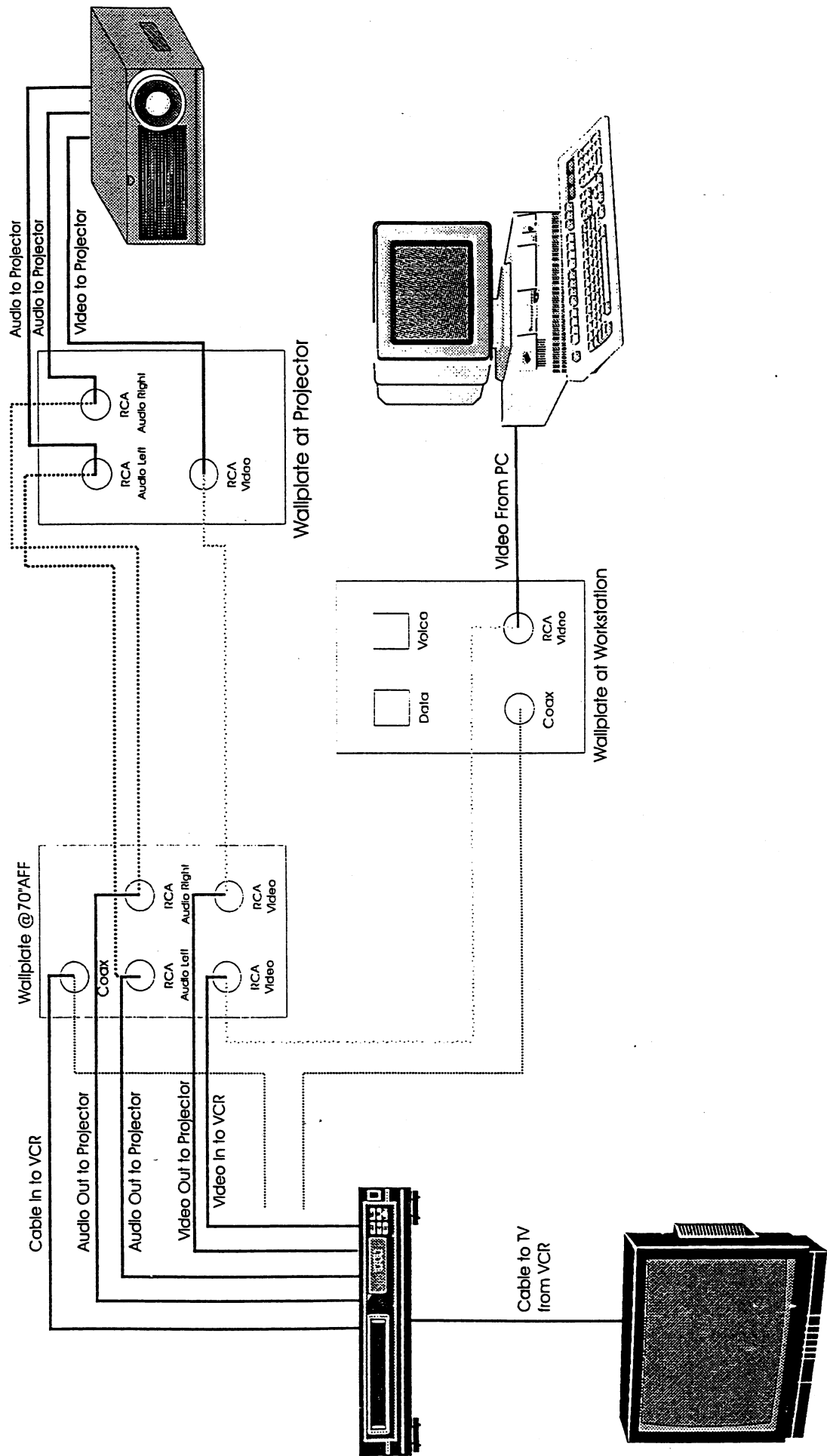


Figure No. 1 - Typical Riser Wiring Schematic

NOT TO SCALE

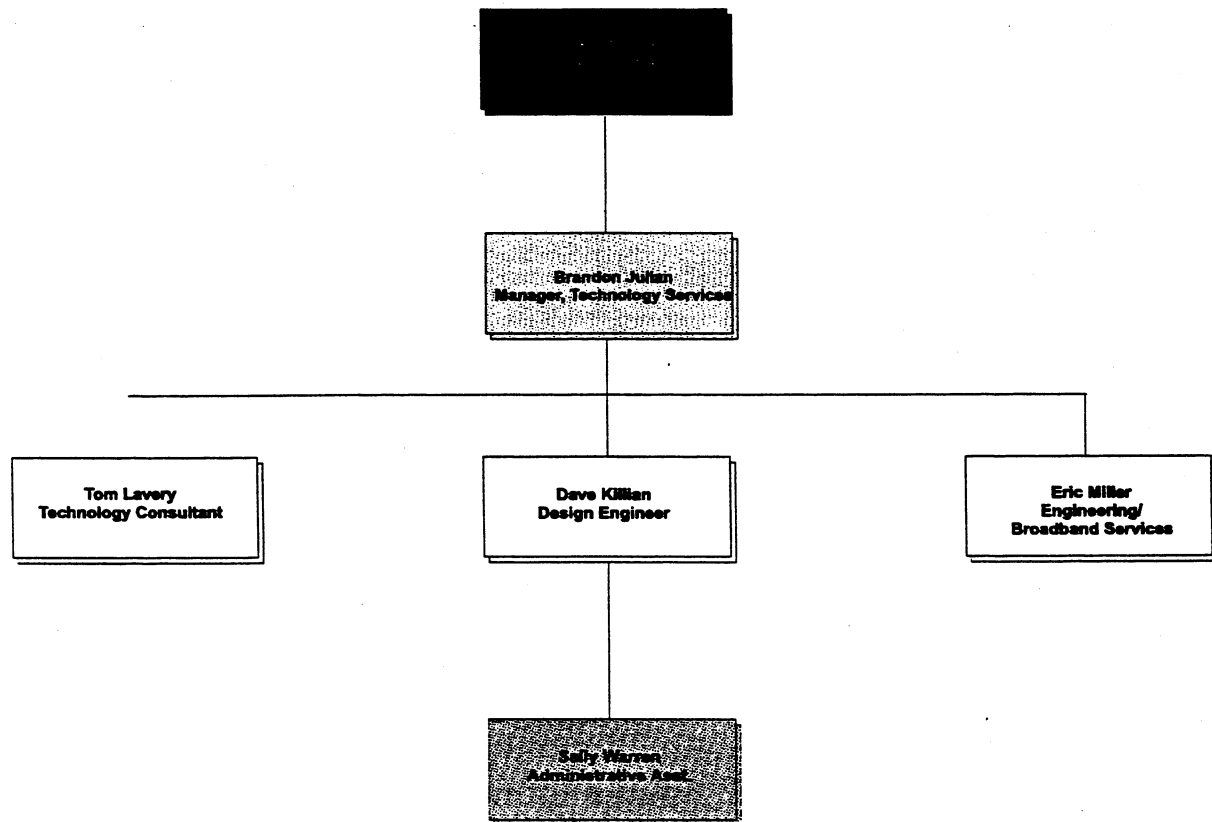
Figure No. 1

Typical Classroom Connection



TeleCommunication Engineers, Inc.

Project Team - Organization Chart



MASTER UNIT PRICE MATRIX

<u>NAME OF UNIT</u>	<u>PRICE/UNIT</u>
SITE SURVEY	
Up to 50,000 sq.ft.	\$600.00
Over 50,000 sq.ft.	\$1200.00
INFRASTRUCTURE DESIGN	
1-50 Workstation Locations per Building	\$1200.00
Additional workstations over 50	\$10.00/ea.
Specification Writing	\$1800.00
CAD DRAFTING	
Drafting of Technology	\$.03/sq.ft.
Drafting of Building and Technology	\$.06/sq.ft.
MISCELLANEOUS	
End User/Manager/Miscellaneous Meetings	\$75.00/hr.
Site Visits During Installation/Project Management	\$75.00/hr.
Final Inspection	\$75.00/hr.
Travel Time	\$50.00/hr.
Mileage Reimbursement	\$.32/mile
Travel Reimbursement	Actual
(Overnight Accommodations, Breakfast and Dinner)	
*Discounts can be negotiated for smaller buildings when work is awarded simultaneously	
Hourly Rates (For items outside the Matrix)	
RCDD/Designer	\$75.00/hr.
CAD Drafter	\$45.00/hr.
TOTAL OF ALL UNIT PRICES	

APPENDIX A

Pricing Models

Model A

Description: This location involves an existing building that requires a building addition. The building now houses about one hundred forty (140) staff and will ultimately house two hundred fifty (250) staff. The building is a typical single floor office building, with a suspended ceiling. The suspended ceiling is used as an air plenum. All work stations are modular furniture. There is one existing telephone/data closet equipped with 110 type hardware. There are no drawings showing the existing cable plant and/or IDF voice and data layout. The dimensions and the location of the telephone closet are such that no cable runs will exceed the ninety (90) meter limit. Each of the new work stations require one cat III and two cat V information outlets. All information outlets will be mounted in the modular furniture. The contractor is to provide a full engineering package. This package is to include, but not limited to, cad drawings of cables, floor plans, IDF layout, generic material list for added equipment, and a cost estimate for materials and installation materials. It is also necessary for the engineering contractor to perform a post installation quality inspection with results being forwarded to the State. Upon completion of the installation the State will send copies of the as-built drawings to the engineering contractor to update the original cad drawings with two (2) copies of the final prints being sent to the State.

Include description of staff roles for each task involved. Unit price by labor category showing the number of units for each category. List all work items and quantity of each item to perform all tasks associated with model pricing (unit pricing and quantity).

INCLUDE STAFF/TASK BREAKDOWN FOR EACH MODEL WITHOUT PRICING IN THE TECHNICAL PORTION OF THE RESPONSE.

QUOTATION: \$ 4,715.20

PRICING FOR MODEL A

NAME OF UNIT	EST.QTY.	PRICE/UNIT	TOTAL PRICE
Initial Manager Meeting	4	\$75.00	\$300.00
Travel Time	2	\$50.00	\$100.00
Mileage (Assume 60 miles one way)	120	\$.325	\$38.40
Site Survey	1	\$600.00	\$600.00
Travel Time	2	\$50.00	\$100.00
Mileage (Assume 60 miles one way)	120	\$.325	\$38.40
Infrastructure Design 1-50 Workstations	1	\$1,200.00	\$1,200.00
Additional Workstations over 50	60	\$10.00	\$600.00
Specification Writing	1	\$1,800.00	\$1,800.00
CAD Drafting (Assume 1 workstation per 100 sq.ft. = 25,000 sq.ft. building)	25,000	\$.06	\$1,500.00
Post Installation Inspection	4	\$75.00	\$300.00
Travel Time	2	\$50.00	\$100.00
Mileage (Assume 60 miles one way)	120	\$.325	\$38.40
TOTAL BID USING EST. QTY.			\$6,715.20

Model B

Description: This location is a new building that will house about sixty (60) staff. The requirement is for eighty (80) cable runs of three (3) Cat V four (4) pair UTP cable. Two (2) of the four (4) pair are to terminate on Cat V patch panels, wall-mounted and one Cat V four (4) pair is to terminate on wall mounted 110 type hardware. The engineering contractor is to provide a full engineering package, to include project management and quality verification of the installed system.

Include description of staff roles for each task involved. Unit price by labor category showing the number of units for each category. List all work items and quantity of each item to perform all tasks associated with model pricing (unit pricing and quantity).

INCLUDE STAFF/TASK BREAKDOWN FOR EACH MODEL WITHOUT PRICING IN THE TECHNICAL PORTION OF THE RESPONSE.

QUOTATION: \$ 5,593.60

PRICING FOR MODEL B

NAME OF UNIT	EST.QTY.	PRICE/UNIT	TOTAL PRICE
Initial Manager Meeting	4	\$75.00	\$300.00
Travel Time	2	\$50.00	\$100.00
Mileage (Assume 60 miles one way)	120	\$.325	\$38.40
Site Survey	1	\$600.00	\$600.00
Travel Time	2	\$50.00	\$100.00
Mileage (Assume 60 miles one way)	120	\$.325	\$38.40
Infrastructure Design 1-50 Workstations	1	\$1,200.00	\$1,200.00
Additional Workstations over 50	30	\$10.00	\$300.00
Specification Writing	1	\$1,800.00	\$1,800.00
CAD Drafting (Assume 1 workstation per 100 sq.ft. = 8,000 sq.ft. building) Prints Avail.	8,000	\$.03	\$240.00
Intermediate Installation Inspection	4	\$75.00	\$300.00
Travel Time	2	\$50.00	\$100.00
Mileage (Assume 60 miles one way)	120	\$.325	\$38.40
Post Installation Inspection	4	\$75.00	\$300.00
Travel Time	2	\$50.00	\$100.00
Mileage (Assume 60 miles one way)	120	\$.325	\$38.40
TOTAL BID USING EST. QTY.			\$5,593.60

Model C

Description: This location is a new construction six (6) story office building. Each floor will house two hundred (200) staff. The configuration of the building is such that the ninety (90) meter distance limit will be exceeded if only one communication closet is provided. Therefore, two (2) communication closets per floor will be provided. A local PBX switch will also be installed in this building. The PBX switch will have one thousand five hundred (1500) line appearances. Each information outlet is to have one cat III four (4) pair and three (3) cat V four (4) pair cables. In addition an additional outlet location is required for every ten (10) staff members. This outlet is to be used for printers. The State requires copper cable for voice risers and fiber cable for data risers. Tie cables between communication closets are also copper for voice and fiber for data. The State requires a complete engineering package for this project. State personnel will perform project management, quality reviews on the design and quality inspections on the installation. The engineering contractor is required to attend four (4) planning sessions at the site location. Each session will last two (2) hours.

Include description of staff roles for each task involved. Unit price by labor category showing the number of units for each category. List all work items and quantity of each item to perform all tasks associated with model pricing (unit pricing and quantity).

INCLUDE STAFF/TASK BREAKDOWN FOR EACH MODEL WITHOUT PRICING IN THE TECHNICAL PORTION OF THE RESPONSE.

QUOTATION: \$ 208,360

PRICING FOR MODEL C

NAME OF UNIT	EST.QTY.	PRICE/UNIT	TOTAL PRICE
Meetings	8 Hours	75/hour	\$600.00
Travel (2 hours round trip)	8 Hours	50/hour	\$400.00
Mileage (120 miles round trip)	480	.32/mile	\$153.60
Infrastructure Design 1-50 Workstations	1	\$1,200.00	\$1,200.00
Additional workstations over 50	1270	\$10.00	\$12,700.00
Specification Writing	1	\$1,800.00	\$1,800.00
CAD Drafting (Assume 1 workstation per 100 sq. ft. = 132,000 sq. ft. building and assumes complete architectural prints to be provided)	132,000	\$.03	\$3,960.00
TOTAL BID USING EST. QTY.			\$20,813.60

Model D

Description: This location is an existing two (2) story building with one hundred (100) staff in place. There are no records or drawings for the cabling within this building. The State requires a complete evaluation of the existing cabling. The engineering contractor is to provide an information package including, but not limited to, IDF and MDF layouts, riser cable system, and floor plans. The engineering contractor is also to recommend a totally new structured cable system for this location.

Include description of staff roles for each task involved. Unit price by labor category showing the number of units for each category. List all work items and quantity of each item to perform all tasks associated with model pricing (unit pricing and quantity).

INCLUDE STAFF/TASK BREAKDOWN FOR EACH MODEL WITHOUT PRICING IN THE TECHNICAL PORTION OF THE RESPONSE.

QUOTATION: \$5,876.80

PRICING FOR MODEL D

NAME OF UNIT	EST.QTY.	PRICE/UNIT	TOTAL PRICE
Initial Manager Meeting	4	\$75.00	\$300.00
Travel Time	2	\$50.00	\$100.00
Mileage (Assume 60 miles one way)	120	\$.325	\$38.40
Site Survey	1	\$1200.00	\$1200.00
Travel Time	2	\$50.00	\$100.00
Mileage (Assume 60 miles one way)	120	\$.325	\$38.40
Infrastructure Design 1-50 Workstations	1	\$1,200.00	\$1,200.00
Additional Workstations over 50	50	\$10.00	\$500.00
Specification Writing	1	\$1,800.00	\$1,800.00
CAD Drafting (Assume 1 workstation per 100 sq.ft. = 10,000 sq.ft. building)	10,000	\$.06	\$600.00
TOTAL BID USING EST. QTY.			\$5,876.80



TeleCommunication
Engineers, Inc.

facsimile transmittal

To: Christine Michel, State of Michigan Fax: 517-241-2714

From: Brandon Julian, TCE Date: 05/01/98

Re: Additional Information Pages: 5

CC: John Foster, TCE

☐ Urgent ☒ For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

Christine:

Following are the updated price matrix sheets with the additional information you requested. I've added an additional column for the personnel that will be handling each portion of the project, as well as units for each of the items.

Also, please notice that I've added a note to the bottom of each sheet clarifying that the pricing we've provided is a fixed bid cost as opposed to an hourly rate. There's also an additional note on Project B regarding the project management you inquired about.

I hope this is what you're looking for. If not, please call me at (810) 621-4000 and I will be more than happy to give you any other information that you need.

I look forward to talking with you again.

Sincerely,
Brandon

CONFIDENTIAL

PRICING FOR MODEL A

NAME OF UNIT	PERSONNEL*	EST.QTY.	PRICE/UNIT	TOTAL PRICE
Initial Manager Meeting	1-2 RCDD	4 hours	\$75.00/hr.	\$300.00
Travel Time		2 hours	\$50.00/hr.	\$100.00
Mileage (Assume 60 miles one way)		120 miles	\$.325/mile	\$38.40
Site Survey	1 RCDD/Designer	1	\$600.00/ca.	\$600.00
Travel Time		2 hours	\$50.00/hr.	\$100.00
Mileage (Assume 60 miles one way)		120/miles	\$.325/mile	\$38.40
Infrastructure Design 1-50 Workstations	1 RCDD/Designer	1	\$1,200.00/ea.	\$1,200.00
Additional Workstations over 50	1 RCDD/Designer	60	\$10.00/ea.	\$600.00
Specification Writing	1 RCDD/Designer	1	\$1,800.00/ea.	\$1,800.00
CAD Drafting (Assume 1 workstation per 100 sq.ft. = 25,000 sq.ft. building)	1 CAD Drafter	25,000/sq.ft.	\$.06/sq.ft.	\$1,500.00
Post Installation Inspection	1 RCDD	4 hours	\$75.00/hr.	\$300.00
Travel Time		2 hours	\$50.00/hr.	\$100.00
Mileage (Assume 60 miles one way)		120 miles	\$.325/mile	\$38.40
TOTAL BID USING EST. QTY.				\$6,715.20

*The personnel required for this project is an estimate. Depending on timeframes or workload, additional resources may be required. This will not effect the pricing of the project. The pricing provided is a fixed bid price and is not priced on an hourly basis.

PRICING FOR MODEL B

[illegible]

*The personnel required for this project is an estimate. Depending on timeframes or workload, additional resources may be required. This will not affect the pricing of the project. The pricing provided is a fixed bid price and is not priced on an hourly basis.

****All telephone conversations and correspondence required for project management of this project is included in the price.**

NAME OF UNIT	PERSONNEL*	EST.QTY.	PRICE/UNIT	TOTAL PRICE
Initial Manager Meeting	1-2 RCDD	4/hours	\$75.00/hr.	\$300.00
Travel Time		2/hours	\$50.00/hr.	\$100.00
Mileage (Assume 60 miles one way)		120/miles	\$.325/mile	\$38.40
Site Survey	1 RCDD/Designer	1	\$1200.00/ea.	\$1200.00
Travel Time		2/hours	\$50.00/hr.	\$100.00
Mileage (Assume 60 miles one way)		120/miles	\$.325/mile	\$38.40
Infrastructure Design 1-50 Workstations	1 RCDD/Designer	1	\$1,200.00/ea.	\$1,200.00
Additional Workstations over 50	1 RCDD/Designer	50	\$10.00/ca.	\$500.00
Specification Writing	1 RCDD/Designer	1	\$1,800.00/ea.	\$1,800.00
CAD Drafting (Assume 1 workstation per 100 sq.ft. = 10,000 sq.ft. building)	1 CAD Drafter	10,000/sq.ft.	\$.06/sq.ft.	\$600.00
TOTAL BID USING EST. QTY.				\$5,876.80

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